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TITLE: Ft. Sam 91 Whiskey Combat Medic Medical Simulation Training Quantitative Integration Enhancement Program

PRINCIPAL INVESTIGATOR: Paul Phrampus, M.D.

CONTRACTING ORGANIZATION: University of Pittsburgh Medical Center
Pittsburgh, PA 15213

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14. ABSTRACT

This document includes the primary accomplishments for the reporting period, 4/1/07 – 3/31/08.

Primary accomplishments during this period: the continued development and validation of the project foundation materials, logistical planning, and the purchase of medical simulators.

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Introduction

The training of the combat field medic is a critical need of the United States Army. The 68W (formerly 91W) program at Fort Sam Houston, Army Medical Department (AMEDD), Department of Combat Medic Training (DCMT), trains over 7,000 Combat Field Medics per year. Increased training consolidation in the armed services has put increased demands on the training program at the DCMT at Fort Sam Houston (FSH). Efficiency and effectiveness of training are important goals that are continually undergoing evaluation by the leadership structure of the DCMT.

To ensure a continuous quality improvement implementation strategy, training center leadership requires feedback on the type of training needed by combat field medic trainees. The leadership is also in need of information concerning how to revise the curriculum to continually meet a high state of readiness to support the Army's medical mission. Additionally, it is beneficial to understand how a soldier's previous experiences, as well as their participation in various continuing education activities, influence their performance on critical skills. There is a need for formalized assessment of combat field medic skills retention and investigation of the ideal method of retraining, taking into account previous experience.

This study consists of two phases. Phase One involves the development of a data set that represents a baseline performance evaluation of the combat medic trainees undergoing initial training at the DCMT. Phase Two evaluates combat field medics returning to training from other assignments to assess their performance on similar scenario with various curriculum delivery methods.

Body

The following is a description of the project accomplishments for the effort associated with this award.

Administrative

During the timeframe covered by this report, Terri Collin, PhD, joined the project in the statistical and research coordination role. Dr. Collin is a University of Pittsburgh employee.

During the first quarter of this annual reporting period, CPT Krustchinsky, Fort Sam Houston, transferred to another base and, as a result, discontinued participation from the project. CPT Connie Welch joined the project as the FSH liaison until a base Principle Investigator was assigned.

During the third quarter of this reporting period, LTC Mayer joined to the project as the FSH Principle Investigator.

During the fourth quarter of this reporting period, LTC Mayer deployed to Iraq. COL James Signaigo replaced LTC Mayer as the base Principle Investigator. COL Signaigo will retire in December, 2008.

Logistical

Accomplishments for this annual reporting period included logistical planning, the purchase of medical simulators, and the continued development and validation of the project protocol.

NOTE: At the time of report preparation, discussions were occurring with TATRC concerning the location of the Phase Two study. At a meeting in March 2008, COL Signaigo suggested that Phase Two data collection take place at FSH rather than the National Training Center at Fort Irwin. This change would allow data collection for both phases to take place concurrently resulting in significant logistical advantages. This report was prepared with the assumption that the Phase Two data collection will move to FSH.

Logistical planning and equipment purchase

Accomplishments for this annual reporting period included a very successful face-to-face meeting at Fort Sam Houston on July 17, 2007. During this visit, UPMC reviewed project details and goals with DCMT leadership. Based upon input from newly involved DCMT project team members, several logistical implementation items were more clearly defined based on the current DCMT workflow. During this meeting, DCMT leadership suggested that the project be conducted inside a trailer and agreed provide a trailer for project use.

UPMC and DCMT leadership discussed employment of on-site personnel to conduct the study.

During the third quarter of this reporting period, the DCMT changed the physical location of the research center to a fixed space facility rather than the trailer previously indicated. Although this change should not negatively affect the quality of the project, the location change did affect logistical planning. Because of this change, the project team defined requirements for the space, including network connectivity, storage, and seating.

On March 5, 2008, COL Signaigo met the UPMC project team in Pittsburgh and toured the WISER facility. During this meeting, COL Signaigo suggested moving the Phase Two study to Fort Sam Houston. This move would allow for concurrent Phase One and Phase Two data collection. As of March 31, 2007, UPMC is planning to submit a formal SOW modification request to allow for this change.

Equipment for Phase One has been ordered and received. The equipment is currently in storage at UPMC.

Project protocol
UPMC created the draft of the protocol for Phase One. This draft was informally reviewed by Dr Stephenson (TATRC), LTC Hernandez (FSH) and the UPMC/University of Pittsburgh IRB. The draft was updated with several requested changes. As of March 31, the protocol was in the process of being modified to include the logistical updates required by the site change.

Statement of Work – Phase One

Update and confirm findings of UPMC 2003 DCMT "Needs Analysis" through a site visit and project review.

UPMC Principal Investigator: Paul Phrampus, MD
US Army Principal Investigator: Colonel James Signaigo

Timeframe	Task	Results
Week 1	1. Prepare for on-site visit and survey of Ft. Sam Houston (FSH) 91 W Combat Medic Simulation Program.	This trip took place on July 17, 2007.

Timeframe	Task	Results
Weeks 2 – 3	1. On-Site Survey of FSH 91 W Combat Medic Simulation Program to re-assess current status of medical simulation program and to meet with current leadership. 2. Review preliminary project plan with the DCMT team. 3. Identify reporting requirements. 4. Identify operational and infrastructure issues and requirements. 5. Review hardware requirements.	This trip took place on July 17, 2007. All tasks were accomplished; however, revisions will be needed based upon later meetings with FSH.
Weeks 2 – 5	1. Design IRB protocol. 2. Modify preliminary project plan, if needed, and deliver to the DCMT team.	The protocol is in development. The project plan will be revised after the protocol is submitted as most tasks are linked to the protocol submission date.
Weeks 3 – 5	1. Order hardware. 2. Review FTE requirements.	Medical simulators have been ordered. FTE requirements will be reviewed after a tentative data collection start date has been projected.
Weeks 3 – 15	1. Design training scenarios. 2. Design and prototype upload tool. 3. Design data reports. 4. Program simulation scenarios. 5. Test simulation scenarios.	These tasks are in development.

Develop necessary hardware, software, and training programs for project implementation.

UPMC Principal Investigators: **Paul Phrampus, MD**
US Army Principal Investigator: **Colonel James Signaigo**

Timeframe	Task	Results
Weeks 6 – 15	1. Receive hardware at UPMC. 2. Test hardware at UPMC. 3. Develop training programs for data collectors and simulation instructors. 4. Hire on-site personnel.	Hardware has been received. The remaining tasks will take place after the tentative data collection start date has been projected.
Weeks 6 – 27	1. Obtain IRB protocol approval.	The protocol is currently in development.
Weeks 16 – 20	1. Test upload tool at UPMC.	This task will take place after the tasks in weeks 6 – 15.

Deployment of FSH hardware, software, and training.

UPMC Principal Investigator: **Paul Phrampus, MD**
US Army Principal Investigator: **Colonel James Signaigo**

Timeframe	Task	Results
Weeks 21 – 24	1. Installation of hardware and software on-site. 2. Test collection of data at simulation stations. 3. Test upload tool on-site. 4. Training of on-site personnel.	The dates for these tasks will be determined after the approval of the protocol.

Collection and reporting of data.

UPMC Principal Investigator: Paul Phrampus, MD
US Army Principal Investigator: Colonel James Signaigo

Timeframe	Task	Results
Weeks 27 – 52	1. Collect data on-site. 2. Monitor data collection uploads at UPMC. 3. Observe data collection on-site through site visits performed on a regular basis. 4. Perform ongoing quality assurance testing of data at UPMC. 5. Provide periodic updates to DCMT leadership and monitor for significant curriculum and/or process changes. 6. Allow on-demand data queries by DCMT leadership. 7. Provider standard reports to DCMT leadership. 8. Analyze data for results on a regular basis.	The dates for these tasks will be determined after the approval of the protocol.

Provide final analysis of Fiscal Year 04 work.

UPMC Principal Investigator: Paul Phrampus, MD
US Army Principal Investigator: Colonel James Signaigo

Timeframe	Task	Results
Weeks 53 - 59	1. Perform comprehensive data analysis. 2. Create final reports and develop recommendations. 3. Provide final reports during an on-site visit with DCMT leadership. 4. Formal close of 04 projects.	The dates for these tasks will be determined after the approval of the protocol.

Statement of Work – Phase Two

Perform an Operational Review at the NTC through a site visit and project review.

UPMC Principal Investigator: **Paul Phrampus, MD**
US Army Principal Investigator: **TBD (NTC)**

Timeframe	Task	Result
Weeks 1-2	1. Prepare for on-site visit and survey of NTC training program.	This task will be replaced with an observation of the BNOC training at FSH.
Weeks 2-8	1. Recruit and hire statistician/psychometrician.	Completed.
Week 3	1. Phone conference with UPMC, TATRC and NTC leadership.	This task may not be necessary pending the Phase Two location change.
Weeks 4-7	1. Draft preliminary project scope document for initial site visit.	This task may not be necessary pending the Phase Two location change.
Week 8	1. On-Site Survey of NTC program to re-assess current status of medical simulation program and to meet with current leadership. 2. Review preliminary project plan with NTC team. 3. Identify reporting requirements. 4. Identify operational and infrastructure issues and requirements. 5. Review hardware requirements.	These tasks will be considered for combination with Phase One tasks pending the Phase Two location change.
Weeks 8 - 10	1. Work with statistician to determine statistical analysis. 2. Review planned data metrics and gathering tools. 3. Determine preferred structure for data point export from SIMS.	These tasks will be considered for combination with Phase One tasks pending the Phase Two location change.
Weeks 13-16	1. Design IRB protocol. 2. Evaluate needs for project plan modifications.	These tasks will be considered for combination with Phase One tasks pending the Phase Two location change.
Week 17	1. On site visit to present IRB protocol to the NTC leadership.	This task will not be necessary pending the Phase Two location change.

Timeframe	Task	Result
Weeks 20 -27	1. Modify IRB protocol based upon site visit to NTC and submit.	These tasks will be considered for combination with Phase One tasks pending the Phase Two location change.
Weeks 20 - 24	1. Order hardware. 2. Review FTE requirements.	These tasks will be considered for combination with Phase One tasks pending the Phase Two location change.
Weeks 40 - 45	1. Design data reports.	These tasks will be considered for combination with Phase One tasks pending the Phase Two location change.

Develop necessary hardware, software, and training programs for project implementation.

UPMC Principal Investigators: Paul Phrampus, MD
US Army Principal Investigator: TBD (NTC)

Timeframe	Task	Result
Weeks 30 - 40	1. Receive hardware at UPMC. 2. Test hardware at UPMC. 3. Develop training programs for data collectors and simulation instructors. 4. Recruit on-site personnel.	These tasks will be considered for combination with Phase One tasks pending the Phase Two location change.
Weeks 28 - 40	1. Obtain IRB protocol approval.	These tasks will be considered for combination with Phase One tasks pending the Phase Two location change.
Weeks 42 - 50	1. Hire on-site personnel.	These tasks will be considered for combination with Phase One tasks pending the Phase Two location change.

Deployment of NTC hardware, software, and training.

UPMC Principal Investigator: Paul Phrampus, MD
US Army Principal Investigator: TBD (NTC)

Timeframe	Task	Result
Weeks 52 - 55	1. Installation of hardware and software on-site. 2. Test collection of data at simulation stations. 3. Test upload tool on-site. 4. Training of on-site personnel.	These tasks will be considered for combination with Phase One tasks pending the Phase Two location change.

Collection and reporting of data.

UPMC Principal Investigator: Paul Phrampus, MD
US Army Principal Investigator: TBD (NTC)

Timeframe	Task	Result
Weeks 56-96	1. Collect data on-site. 2. Monitor data collection uploads at UPMC. 3. Observe data collection on-site through site visits performed on a regular basis. 4. Perform ongoing quality assurance testing of data at UPMC. 5. Provide periodic updates to NTC leadership and monitor for significant curriculum and/or process changes. 6. Allow on-demand data queries by NTC leadership. 7. Provider standard reports to NTC leadership. 8. Analyze data on a regular basis.	The timeframe for these tasks, regardless of location, will be defined after the protocol is submitted / approved.

Provide final analysis of Year 05 work.

UPMC Principal Investigator: Paul Phrampus, MD
US Army Principal Investigator: Colonel James Signaigo and TBD (NTC)

Timeframe	Task	Result
Weeks 96-104	1. Perform comprehensive data analysis. 2. Create final reports and develop recommendations. 3. Provide final reports during an on-site visit with DCMT 91 W leadership and NTC leadership. 4. Formal close of FY05 project.	These tasks will be considered for combination with Phase One tasks pending the Phase Two location change.

Key Research Accomplishments

The following is a bulleted list of key research accomplishments emanating from this effort:

- A project team was established during this annual reporting period.
- UPMC purchased and received study equipment.

Reportable Outcomes

During this report period, no final outcomes were developed. The project is in process and under revision.

However, interim materials include:

- FSH Kickoff Meeting materials
- Meeting materials for a March 5, 2008, meeting with COL Signaigo

They are included in the Appendices section.

Conclusions

Due to leadership and program changes at the DCMT, this project has required a great deal of flexible and creative planning in order to meet the needs of the DCMT while adhering to the intent of the Congressional appropriation.

We feel confident that UPMC, in collaboration with WISER and the University of Hawaii, will provide a successful program with quantifiable results.

References

This report did not require the use of documented reference material.

Appendices

(materials for 7-17-07 meeting)

AGENDA

Kickoff Meeting for
Cooperative Agreement #W81XWH-05-2-0049
Department of Combat Medic Training, Fort Sam Houston
July 17 – 18, 2007

July 17, 2007

Morning – 9:00 AM

- Tour of Training Facilities

Lunch – TBD

Afternoon – TBD

- Introductions
    1. DCMT – CPT Connie Welch
    2. UPMC WISER – Dr. Paul Phrampus
    3. University of Hawaii – Dr. Ben Berg
    4. TATRC – Harvey Magee
- Project Significance – Harvey Magee
- Project Overview – Dr. Paul Phrampus and Dr. Ben Berg
- Operations and Logistics Discussion – All
- Next Steps and Action Items – All
    1. IRB Protocol
    2. Principal Investigator (DCMT)
    3. Letter of Intent
- Closing Remarks – Harvey Magee

July 18, 2007 (if needed)

- Continuation of follow up items

Key Information

Cooperative Agreement #W81XWH-05-2-0049

Combat Field Medic Longitudinal Performance and Baseline Training Comparative Analysis

Abbreviations:

DCMT	Department of Combat Medic Training
FI	Fort Irwin, CA
FSH	Fort Sam Houston, TX
NTC	National Training Center
UPMC	University of Pittsburgh Medical Center
WISER	Peter M. Winter Institute for Simulation Education and Research

Purpose:
The purpose of this study is to create a statistical analysis comparing training methods, work experiences, and performance results for the purpose of providing information to the Department of Combat Medic Training and the National Training Center. This information can be used by the DCMT and NTC for a variety of purposes including identifying retraining needs, skills assessments, and performance benchmarks.

Overview:
The study will be conducted during two phases. Phase One will take place at Fort Sam Houston and Phase Two occur at Fort Irwin.

During Phase One, medic baseline performance data on three key combat medical conditions will be collected. These conditions are:

- Hemorrhage
- Airway Control
- Tension Pneumothorax

During Phase Two, these same three scenarios will be assed and demographic data concerning combat, civilian, and continuing education medical experiences will be collected. Three different training methodologies will also be evaluated.

The data sets will be compared and feedback will be provided to the DCMT and NTC leadership.

Expectations:
Data collections and all other aspects of the study will be conducted by training/simulation personnel funded by the appropriation. All necessary steps will be taken to minimize disruption to the current training workflow. Equipment, including SimMan mannequins and laptop computers, will be provided through the appropriation.

Combat Field Medic Longitudinal Performance and Baseline Training Comparative Analysis

Paul E. Phrampus, MD FACEP
Interim Director, WISER Institute

WISER
Peter M. Winter Institute for Simulation, Education & Research

UPMC IMITS Center

(materials for 3-5-08 meeting)

AGENDA

Update Meeting for
Cooperative Agreement #W81XWH-05-2-0049

March 5, 2008

Morning – 9:00 AM

- Introductions and Project Significance – Harvey Magee
- Peter M. Winter Institute for Simulation Education and Research (WISER) Overview – Dr. Paul Phrampus
- Tour of WISER

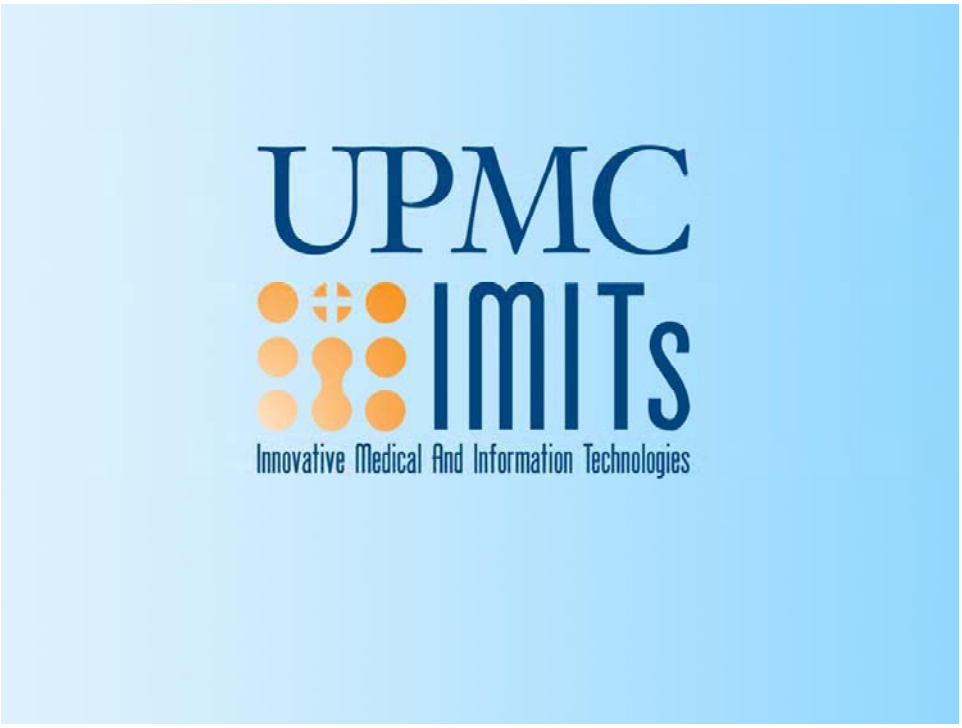
- Break

- Project Overview – Dr. Paul Phrampus
- General Discussion – All

Lunch

Afternoon – 1:00 PM

- Project Planning – All
- Next Steps and Action Items – All
    1. IRB Protocol Process
    2. Protocol Contact Person
    3. Letter of Intent
    4. Base Clearances
- Closing Remarks – Harvey Magee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